



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
REGION I  
475 ALLENDALE ROAD  
KING OF PRUSSIA, PENNSYLVANIA 19406-1415

May 11, 2011

Mr. Sam Belcher  
Vice President Nine Mile Point  
Nine Mile Point Nuclear Station, LLC  
P.O. Box 63  
Lycoming, NY 13093

SUBJECT: NINE MILE POINT NUCLEAR STATION - NRC INTEGRATED INSPECTION  
REPORT 05000220/2011002 AND 05000410/2011002

Dear Mr. Belcher:

On March 31, 2011, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your Nine Mile Point Nuclear Station Units 1 and 2. The enclosed inspection report documents the inspection results, which were discussed on April 7, 2011, with you and other members of your staff.

The inspection examined activities conducted under your license as they relate to safety and compliance with the Commission's rules and regulations and with the conditions of your license. The inspectors reviewed selected procedures and records, observed activities, and interviewed personnel.

This report documents one NRC-identified and one self-revealing finding of very low safety significance (Green). Both of the findings were determined to involve violations of NRC requirements. However, because of the very low safety significance and because they are entered into your corrective action program (CAP), the NRC is treating these findings as non-cited violations (NCVs) consistent with Section 2.3.2 of the NRC Enforcement Policy. If you contest any NCV noted in this report, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the U.S. Nuclear Regulatory Commission, ATTN.: Document Control Desk, Washington DC 20555-0001; with copies to the Regional Administrator, Region I; the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, DC 20555-0001; and the NRC Resident Inspector at Nine Mile Point Nuclear Station.

In addition, if you disagree with the cross-cutting aspect assigned to any finding in this report, you should provide a response within 30 days of the date of this inspection report, with the basis for your disagreement, to the Regional Administrator, Region I, and the NRC Resident Inspector at Nine Mile Point Nuclear Station.

In accordance with 10 CFR Part 2.390 of the NRC's "Rules of Practice," a copy of this letter, its enclosure, and your response (if any) will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of the

S. Belcher

2

NRC's document system (ADAMS). ADAMS is accessible from the NRC Website at <http://www.nrc.gov/reading-rm/adams.html> (the Public Electronic Reading Room).

Sincerely,

A handwritten signature in cursive script, reading "Glenn T. Dentel".

Glenn T. Dentel, Chief  
Projects Branch 1  
Division of Reactor Projects

Docket Nos.: 50-220, 50-410  
License Nos.: DPR-63, NPF-69

Enclosure: Inspection Report 05000220/2011002 and 05000410/2011002  
w/Attachment: Supplemental Information

cc w/encl: Distribution via ListServ

S. Belcher

2

NRC's document system (ADAMS). ADAMS is accessible from the NRC Website at <http://www.nrc.gov/reading-rm/adams.html> (the Public Electronic Reading Room).

Sincerely,

/RA/

Glenn T. Dentel, Chief  
Projects Branch 1  
Division of Reactor Projects

Docket Nos.: 50-220, 50-410  
License Nos.: DPR-63, NPF-69

Enclosure: Inspection Report 05000220/2011002 and 05000410/2011002  
w/Attachment: Supplemental Information

Distribution (via email):

W. Dean, RA  
D. Lew, DRA  
D. Roberts, DRP  
J. Clifford, DRP  
C. Miller, DRS  
P. Wilson, DRS  
S. Bush-Goddard, RI OEDO  
G. Dentel, DRP  
N. Perry, DRP

J. Hawkins, DRP  
K. Cronk, DRP  
N. Floyd, DRP  
K. Kolaczyk, DRP, SRI  
D. Dempsey, DRP, RI  
K. Kolek, DRP, OA  
RidsNrrPMNineMilePointResource  
RidsNrrDorLpl1-1 Resource  
ROPReportsResource

**SUNSI Review Complete: JRH (Reviewer's Initials)**

DOCUMENT NAME: G:\DRP\BRANCH1\NINE\_MILE\_POINT\REPORTS\2011 - 2012 INSPECTION REPORTS\IR 2011-002\NMP IR 2011-002.DOCX

After declaring this document "An Official Agency Record" it will be released to the Public.

To receive a copy of this document, indicate in the box: "C" = Copy without attachment/enclosure "E" = Copy with attachment/enclosure "N" = No copy

**ML111310322**

OFFICE	lhp	RI/DRP		RI/DRP		RI/DRP	
NAME		J.Hawkins/jrh		K.Kolaczyk/gtd for per telecon		G.Dentel/gtd	
DATE		05/11/11		05/11/11		05/11/11	

OFFICIAL RECORD COPY

## U.S. NUCLEAR REGULATORY COMMISSION

## REGION I

Docket No.: 50-220, 50-410

License No.: DPR-63, NPF-69

Report No.: 05000220/2011002; 05000410/2011002

Licensee: Nine Mile Point Nuclear Station, LLC (NMPNS)

Facility: Nine Mile Point, Units 1 and 2

Location: Oswego, NY

Dates: January 1 through March 31, 2011

Inspectors: K. Kolaczyk, Senior Resident Inspector  
D. Dempsey, Resident Inspector  
J. Furia, Senior Health Physicist  
D. Dodson, Project Engineer

Approved By: Glenn T. Dentel, Chief  
Projects Branch 1  
Division of Reactor Projects

Enclosure

## TABLE OF CONTENTS

SUMMARY OF FINDINGS.....	3
REPORT DETAILS .....	5
1. REACTOR SAFETY .....	5
1R01 Adverse Weather Protection.....	5
1R04 Equipment Alignment .....	6
1R05 Fire Protection.....	6
1R11 Licensed Operator Requalification Program .....	7
1R12 Maintenance Effectiveness.....	8
1R13 Maintenance Risk Assessments and Emergent Work Control .....	8
1R15 Operability Evaluations.....	9
1R18 Plant Modifications .....	10
1R19 Post-Maintenance Testing.....	11
1R20 Refueling and Other Outage Activities.....	12
1R22 Surveillance Testing.....	13
1EP6 Drill Evaluation .....	15
2. RADIATION SAFETY .....	15
2RS5 Radiation Monitoring Instrumentation .....	15
2RS6 Radioactive Gaseous and Liquid Effluent Treatment.....	16
4. OTHER ACTIVITIES.....	19
4OA1 Performance Indicator Verification.....	19
4OA2 Problem Identification and Resolution .....	20
4OA3 Followup of Events and Notices of Enforcement Discretion.....	23
4OA6 Meetings .....	24
ATTACHMENT: SUPPLEMENTAL INFORMATION .....	24
SUPPLEMENTAL INFORMATION .....	A-1
KEY POINTS OF CONTACT .....	A-1
LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED .....	A-1
LIST OF DOCUMENTS REVIEWED .....	A-2
LIST OF ACRONYMS.....	A-10

## SUMMARY OF FINDINGS

IR 05000220/2011002, 05000410/2011002; 01/01/2011 - 03/31/2011; Nine Mile Point Nuclear Station, Units 1 and 2; Surveillance Testing, Problem Identification and Resolution.

The report covered a three-month period of inspection by resident inspectors and announced inspections performed by regional inspectors. Two Green findings, which were non-cited violations (NCVs), were identified. The significance of most findings is indicated by their color (Green, White, Yellow, Red) using Inspection Manual Chapter (IMC) 0609, "Significance Determination Process (SDP)." The cross-cutting aspects for the findings were determined using IMC 0310, "Components Within the Cross-Cutting Areas." Findings for which the SDP does not apply may be Green or be assigned a severity level after NRC management review. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 4, dated December 2006.

### Cornerstone: Barrier Integrity

- Green. The inspectors identified a finding of very low safety significance associated with a non-cited violation (NCV) of 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action," for Nine Mile Point Nuclear Station's (NMPNS) failure to take adequate corrective actions for a condition adverse to quality. Specifically, between January 26, 2009, and November 29, 2010, NMPNS did not implement adequate corrective actions to address a lack of spring clip engagement for 600 volt General Electric 7700 line motor control centers (MCCs). As a result, the breaker for the control room emergency ventilation system fan failed to correctly operate when required. NMPNS entered this issue into its corrective action program (CAP) and implemented a physical verification of spring clip engagement.

The finding was more than minor because it was associated with the structure, system, and component (SSC), and barrier performance attribute of the Barrier Integrity cornerstone, and affected the cornerstone objective to provide reasonable assurance that physical design barriers (fuel cladding, reactor coolant system, and containment) protect the public from radionuclide releases caused by accidents or events. The finding was determined to be of very low safety significance, because the finding did not represent a degradation of the radiological barrier function of the control room, and the finding did not represent a degradation of the barrier function of the control room against smoke or a toxic atmosphere. This finding had a cross-cutting aspect in the area of problem identification and resolution, corrective action program component, because NMPNS did not thoroughly evaluate the initial component failures such that the resolutions addressed the causes and extent of conditions. Specifically, NMPNS did not properly prioritize and evaluate spring clip engagement issues over 22 months. (P.1.c per IMC 0310). (Section 4OA2)

### Cornerstone: Mitigating Systems

- Green. A self-revealing finding of very low safety significance associated with a non-cited violation (NCV) of 10 CFR Part 50, Criterion XVI, "Corrective Action," was identified following a monthly surveillance test (ST) on January 18, 2011, when Unit 2 operators removed the Division I emergency diesel generator (EDG) from the grid due to rising jacket water cooling

Enclosure

temperature. The condition resulted in an unplanned entry into a technical specification limiting condition for operation (LCO) and 23 hours of system unavailability. The inspectors determined that ineffective performance monitoring of the Division I EDG jacket water cooling system since April 2008 was a performance deficiency in that the degraded condition of the thermostatic control valve was reasonably within NMPNS' ability to foresee and correct. NMPNS entered this issue into its corrective action program (CAP), repaired the valve and enhanced the valve maintenance procedure to ensure smooth operation.

The finding was more than minor because it was associated with the reliability attribute of the mitigating systems cornerstone and affected the cornerstone objective to ensure the availability, reliability and capability of systems that respond to initiating events to prevent undesirable consequences. The finding was of very low safety significance because it was not a design or qualification deficiency, did not represent a loss of system/train safety function, and did not screen as potentially risk significant due to external events. The finding had a cross-cutting aspect in the area of problem identification and resolution, corrective action program, because NMPNS did not take appropriate correction actions to address an adverse trend in a timely manner, commensurate with its safety significance and complexity. (P.1.d per IMC 0310). (Section 1R22)

#### **Other Findings**

None.

Enclosure

## REPORT DETAILS

### Summary of Plant Status

Nine Mile Point Unit 1 began the inspection period at full rated thermal power (RTP). On January 5, and January 15, power was reduced to 80 percent for a control rod pattern adjustment and was restored to full RTP later that day. On January 28, power was reduced to 90 percent for a control rod pattern adjustment and was restored to full RTP later that day. On January 30, plant power was reduced to 53 percent when an electrical bus duct cooling fan failed, resulting in the loss of forced ventilation on the bus duct. Reactor power was restored to full RTP on February 2. On February 18, the plant entered the coastdown period of operation until March 20, when the plant was disconnected from the grid to begin a scheduled refuel outage. The plant reached cold shutdown on March 21, and remained shutdown for the rest of the inspection period.

Nine Mile Point Unit 2 began the inspection period at full RTP. On January 29, power was reduced to 63 percent for a control rod sequence exchange and was restored to full RTP later that day. On March 5, plant power was reduced to 63 percent to facilitate a feed pump swap and surveillance testing. Plant power was restored to full RTP later that day. On March 6, plant power was reduced to 58 percent when concerns arose regarding the functionality of the 'A' feedwater pump. The plant was restored to full RTP later that day and remained at full RTP for the rest of the inspection period.

### 1. REACTOR SAFETY

#### **Cornerstones: Initiating Events, Mitigating Systems, and Barrier Integrity**

#### 1R01 Adverse Weather Protection (71111.01)

##### Impending Adverse Weather Conditions (One sample)

##### a. Inspection Scope

During the week of January 10, 2011, NMNPS experienced unusually cold and snowy conditions with nighttime temperatures below 15 degrees Fahrenheit (°F). During this time, large amounts of sheet ice formed on Lake Ontario along the shoreline. The inspectors toured areas of the plant that contained structures and systems that could be adversely affected by cold temperatures and frazil ice conditions. Areas of focus were the greenhouse, turbine building (TB), and the radwaste solidification storage building. The inspectors verified that temperatures in those areas did not decrease below the values outlined in the plant updated final safety analysis report (UFSAR) and that the buildup of ice on Lake Ontario did not impact the service water (SW), circulating water and fire main systems. Documents reviewed for each section are listed in the Attachment.

Enclosure



b. Findings

No findings were identified.

1R04 Equipment Alignment (71111.04)

Partial System Walkdown (71111.04Q - Six samples)

a. Inspection Scope

The inspectors performed partial system walkdowns to verify risk-significant systems were properly aligned for operation. The inspectors verified the operability and alignment of these risk-significant systems while their redundant trains or systems were inoperable or out of service for maintenance. The inspectors compared system lineups to system operating procedures, system drawings, and the applicable chapters in the UFSAR. The inspectors verified the operability of critical system components by observing component material condition during the system walkdown.

The following plant system alignments were reviewed:

- Unit 1 cardox fire extinguishing system following the completion of maintenance activities;
- Unit 1 trains 'A' and 'B' of the isolation condenser system because of the system risk significance;
- Unit 1 shutdown cooling system when the plant had been shut down for commencement of a planned refueling outage;
- Unit 1 spent fuel pool cooling system when the reactor core was fully offloaded into the spent fuel pool;
- Unit 1 SW system while the raw water pump for the 102 EDG was out of service due to a failed surveillance test (ST); and
- Unit 2 Division II EDG while the Division I EDG was inoperable for corrective maintenance.

b. Findings

No findings were identified.

1R05 Fire Protection (71111.05)

Routine Resident Inspector Tours (71111.05Q – Six samples)

a. Inspection Scope

The inspectors toured areas important to reactor safety to evaluate the station's control of transient combustibles and ignition sources, and to examine the material condition, operational status, and operational lineup of fire protection systems including detection, suppression, and fire barriers. The inspectors evaluated fire protection attributes using

Enclosure

the criteria contained in Unit 1 UFSAR Appendix 10A, "Fire Hazards Analysis," Unit 2 UFSAR Appendix 9B, "Safe Shutdown Evaluation," and the applicable pre-fire plans. The areas inspected included:

- Unit 1 containment spray EDG power board 102 room, TB 261 foot elevation (fire area FA23);
- Unit 1 containment spray EDG 102 room, TB 261 foot elevation (fire area FA22);
- Unit 1 containment spray EDG power board 103 room, TB 261 foot elevation (fire area F24);
- Unit 1 containment spray EDG 103 room, TB 261 foot elevation (fire area FA19);
- Unit 2 Division I cable routing area, control building 237 foot elevation; and
- Unit 2 Division II cable routing area, control building 237 foot elevation.

b. Findings

No findings were identified.

1R11 Licensed Operator Regualification Program

Quarterly Review (71111.11Q - Two samples)

a. Inspection Scope

The inspectors evaluated two simulator scenarios in the licensed operator regualification training (LORT) program. The inspectors assessed the clarity and effectiveness of communications, the implementation of appropriate actions in response to alarms, the performance of timely control board operations, the oversight and direction provided by the shift manager, and the performance of risk significant operator actions including the use of special operating procedures (SOPs) and emergency operating procedures (EOPs). During the scenarios, the inspectors also compared simulator performance with actual plant performance in the control room. The following scenarios were observed:

- On January 25, 2011, the inspectors observed a Unit 1 LORT simulator scenario to assess operator and instructor performance. The scenario involved a leak in the reactor water cleanup nonregenerative heat exchanger, a loss of 115 kilovolt (kV) power and condenser vacuum, reactor scram, and failure of liquid poison pumps 11 and 12 to start.
- On January 27, 2011, the inspectors observed a Unit 2 LORT simulator scenario to assess operator and instructor performance. The scenario involved a loss of reactor protection system power, inadvertent high pressure core spray (HPCS) actuation with failure of the injection valve to open, loss of extraction steam to a sixth point feedwater heater, and a small break loss of coolant accident with failure of Division I emergency core cooling systems and the reactor core isolation cooling (RCIC) system.

b. Findings

No findings were identified.

1R12 Maintenance Effectiveness (71111.12Q - Three samples)a. Inspection Scope

The inspectors reviewed performance-based problems, and the performance and condition history of selected systems and structures to assess the effectiveness of the maintenance program. The inspectors reviewed the systems to ensure that the station's review focused on proper maintenance rule scoping in accordance with Title 10, Code of Federal Regulations (CFR) Part 50.65, characterization of reliability issues, tracking system and component unavailability, and 10 CFR Part 50.65(a)(1) and (a)(2) classification. In addition, the inspectors reviewed the site's ability to identify and address common cause failures, and to trend key parameters. The following maintenance rule inspection samples were reviewed:

- Unit 1 main generator leads cooling system;
- Unit 2 RCIC system; and
- Unit 2 instrument air compressors.

b. Findings

No findings were identified.

1R13 Maintenance Risk Assessments and Emergent Work Control (71111.13 - Seven samples)a. Inspection Scope

The inspectors evaluated the effectiveness of the maintenance risk assessments required by 10 CFR Part 50.65(a)(4). The inspectors reviewed equipment logs, work schedules, and performed plant tours to verify that actual plant configuration matched the assessed configuration. Additionally, the inspectors verified that risk management actions for both planned and emergent work were consistent with those described in station procedures. The inspectors reviewed risk assessments for the activities listed below.

Unit 1

- Week of January 17, that involved planned maintenance on the 11 SW pump and strainer.
- Week of March 7, that involved an ST on the power board 103 undervoltage relays, and core spray systems.

Enclosure

- Week of March 14, that included maintenance on 345 kV line 9, and maintenance and testing of fire suppression, high pressure coolant injection, and containment spray systems.
- Week of March 28, that involved planned maintenance on the shutdown cooling system.

## Unit 2

- Unplanned maintenance on the alternating current input breaker for battery charger 2BYS-CHGR1B1, which tripped while being placed into service during the performance of work order (WO) C90934388.
- Week of February 7, that included planned maintenance and surveillance on the RCIC system and unplanned maintenance on a RCIC high steam flow isolation trip unit.
- Week of February 28, that included maintenance on uninterruptible power supply 2VBB-UPS3B, SW pump SWP\*P1C and its associated strainer, the Division III EDG, and the HPCS system.

### b. Findings

No findings were identified.

## 1R15 Operability Evaluations (71111.15 - Seven samples)

### a. Inspection Scope

The inspectors evaluated the acceptability of operability evaluations, the use and control of compensatory measures, and compliance with technical specifications (TSs.) The evaluations were reviewed using criteria specified in NRC Regulatory Issue Summary 2005-20, "Revision to Guidance Formerly Contained in NRC Generic Letter 91-18, 'Information to Licensees Regarding Two NRC Inspection Manual Sections on Resolution of Degraded and Nonconforming Conditions and on Operability'," and Inspection Manual Part 9900, "Operability Determinations and Functionality Assessments for Resolution of Degraded or Nonconforming Conditions Adverse to Quality or Safety." The inspectors' reviews included verification that the operability determinations were made as specified by Procedure CNG-OP-1.01-1002, "Conduct of Operability Determinations / Functionality Assessments," Revision 00101. The technical adequacy of the determinations was reviewed and compared to the TSs, UFSAR, and associated design basis documents (DBDs). The following evaluations were reviewed:

- Condition report (CR) 2011-000452, concerning foreign material in the Division I EDG jacket water cooling loop;
- CR 2011-000225, concerning loss of level in EDG 103 fuel oil return sight glass;
- CR 2010-000433, concerning 102 EDG raw water pump coated with epoxy;

Enclosure

- CR 2011-001229, concerning an unexpected main steam isolation signal during reactor pressure vessel level instrument surveillance;
- CR 2011-001289, concerning maintaining the environmental qualification of RCIC high steam flow transmitter 2ICS\*PDT167;
- CR 2011-001331, concerning low cooling water flow rate during EDG 102 raw water pump quarterly ST; and
- CR 2011-001570, concerning control room cooling temperature control valve not fully open.

b. Findings

No findings were identified.

1R18 Plant Modifications (71111.18)

.1 Temporary Modifications (Two samples)

a. Inspection Scope

The inspectors reviewed Unit 1 temporary plant modification engineering change package (ECP) ECP-10-000444, "Restore Indication to Annun. K1-4-6." The purpose of this change was to modify the torus/drywell vacuum relief check valve 13 position indication circuitry so annunciator K1-4-6 would no longer be illuminated on the main control board. K1-4-6 had remained lit after the completion of surveillance N1-ST-M3, "Suppression Chamber - Drywell Relief Valves Exercising," during post maintenance testing of vacuum breaker BV-68-04. The modification established position indication for BV-68-04. The inspectors also reviewed Unit 2 ECP-10-000438, "Lifted Leads on Control Rod 22-07," which lifted leads to disable five specific position indications for control rods 22-07. The modification restored position indication for the control rod at all but five positions. The inspectors interviewed the design change engineers, reviewed the applicable design documentation and 10 CFR Part 50.59 screenings against system design basis information, verified that post-installation tests were adequate, and verified that NMPNS controlled the modifications in accordance with station procedures.

b. Findings

No findings were identified.

.2 Permanent Modifications (One sample)

a. Inspection Scope

The inspectors reviewed Unit 1 permanent plant modification ECP-11-000002, "Replace U1 Liquid Poison Pump Internals to Achieve Greater Flow." The purpose of this change was to increase flow margin between normal operating flows and the minimum design requirements by greater than or equal to four gallons per minute, thereby reducing the likelihood of a TS failure. The inspectors interviewed the design change engineer, reviewed the applicable design documentation and 10 CFR Part 50.59 screening, and

Enclosure

walked down the liquid poison pumps to verify that the modification would not negatively impact the design basis of the liquid poison system.

b. Findings

No findings were identified.

1R19 Post-Maintenance Testing (71111.19 - Eight samples)

a. Inspection Scope

The inspectors reviewed the post maintenance tests (PMTs) listed below to verify that procedures and test activities ensured system operability and functional capability. The inspectors reviewed the test procedure to verify that the procedure adequately tested the safety functions that may have been affected by the maintenance activity, that the acceptance criteria in the procedure were consistent with information in the applicable licensing basis and/or DBDs, and that the procedure had been properly reviewed and approved. The inspectors also witnessed the test or reviewed test data, to verify the test results adequately demonstrated restoration of the affected safety functions.

- Unit 1 WO C081082400 to refurbish scram inlet valve FCV-44-1831(126). The PMT was to verify correct valve stroke time using N1-IPM-044-008, "CRD Scram Valve Timing," Revision 00300.
- Unit 1 WO C90647598 to inspect the motor actuator for core spray discharge isolation valve 121. The PMT was to verify proper valve operation using S-EPM-GEN-064 Attachment 3, "Electrical Preventive Maintenance Procedure," and N1-ST-Q1B, "CS 121 Pump Valve and SDC Water Seal Check Valve Operability Test," Revision 01100.
- Unit 1 WO C91140518 to replace a main generator leads cooling fan bearing. The PMT was to verify proper fan operation and vibration levels in accordance with GAI-REL-06, "Vibration Measurements," Revision 03.
- Unit 1 WO C91223177 to troubleshoot flow control valve FCV-38-131 for shutdown cooling water heat exchanger 12. The PMT performed was N1-IPM-CAL-007, "Differential Pressure Indicating Switch and Pressure Indicating Switch Instrument Loop Calibration (Two year or Less Frequency)," Revision 00200.
- Unit 2 WO C91126908 to replace the thermostatic valve in the Division I EDG jacket water cooling loop. The PMT was to verify proper EDG operation in accordance with N2-OSP-EGS-M@001, "Diesel Generator and Diesel Air Start Valve Operability Test - Division I and II," Revision 00601.
- Unit 2 WO C90917294 to repair leakage through RCIC turbine steam supply valve 2ICS\*MOV120. The PMT included valve diagnostic tests and a system operability test in accordance with N2-OSP-ICS-Q@002, "RCIC Pump and Valve Operability Test and System Integrity Test and ASME XI Functional Test," Revision 01000.

Enclosure

- Unit 2 WO C061762600 to perform preventive maintenance on uninterruptible power supply 2VBB-UPS3B. The PMT included functional checks in accordance with N2-EPM-GEN-V364, "UPS Inverter Functional Checks, Cleaning and Inspection," Revision 01100 and verification of normal operation in accordance with N2-OP-71D, "Uninterruptible Power Supplies (UPS)," Revision 00500.
- Unit 2 WO C081828500 to rebuild 11 reactor building component cooling pump 70-01. The PMT included inservice tests performed in accordance with N1-PM-V7, "Reactor Building Closed Loop Cooling System Pump and Valve Operability Test," Revision 00100 and N1-PM-V2, "Pump Curve Validation," Revision 00700.

b. Findings

No findings were identified.

1R20 Refueling and Other Outage Activities (71111.20 - One sample)

Unit 1 Refueling Outage

a. Inspection Scope

The inspectors observed and/or reviewed the following Unit 1 refueling outage (RFO) activities to verify that operability requirements were met and that risk, industry experience, and previous site-specific problems were considered. The RFO was in progress at the end of the inspection report period.

- The inspectors reviewed the outage schedule, attended pre-outage planning and risk assessment meetings to verify TS-required safety system availability was maintained and shutdown risk was minimized. The inspectors verified that, when specified by NMPNS procedure NIP-OUT-01, "Shutdown Safety," contingency plans existed for restoring key safety functions.
- The inspectors observed portions of the plant shutdown and cooldown on March 21, and verified that the TS cooldown rate limits were satisfied.
- Through plant tours, the inspectors verified that NMPNS maintained and adequately protected electrical power supplies to safety-related equipment and that TS requirements were met.
- The inspectors verified proper alignment and operation of shutdown cooling and other decay heat removal systems. The inspector observed several infrequently performed evolutions such as reactor cavity fill and spent fuel movement activities. During these activities the inspector verified applicable operating procedures were followed and conservative decision making processes were made when appropriate.
- The inspectors verified that requirements for refueling operations were met through refuel bridge observations, control room panel walkdowns, and discussions with operations department personnel.

Enclosure

- The inspectors performed an "as-found" walkdown of the drywell to identify evidence of reactor coolant system leakage and assess the condition of drywell structures, piping, and supports.

These activities constituted a portion of one sample as defined by Inspection Procedure 71111.20, with completion to be documented in inspection report 05000220/2011003 and 05000410/2011003.

b. Findings

No findings were identified.

1R22 Surveillance Testing (71111.22 - Nine samples)

a. Inspection Scope

The inspectors witnessed performance of and/or reviewed test data for risk-significant STs to assess whether the components and systems tested satisfied design and licensing basis requirements. The inspectors verified that test acceptance criteria were clear, demonstrated operational readiness and were consistent with the DBDs; that test instrumentation had current calibrations and the range and accuracy for the application; and that tests were performed, as written, with applicable prerequisites satisfied. Upon test completion, the inspectors verified that equipment was returned to the status specified to perform its safety function.

The following STs were reviewed:

- N1-ST-Q6D, "Containment Spray System Loop 122 Quarterly Operability Test," Revision 00801;
- N1-ST-C25, "Liquid Poison Pump Operability Test," Revision 01, for pump 11;
- N1-ST-Q20, "Reactor Building Heating, Cooling, and Ventilation System Test," Revision 01300;
- N1-ST-C9, "Control Room Emergency Ventilation System Operability Test," Revision 1501;
- N1-ST-Q25, "Emergency Diesel Generator Cooling Water Quarterly Test," Revision 01700;
- N1-ISP-LRT-TYC, "Type 'C' Containment Isolation Valve Leak Rate Test (LLRT)," [local leak rate test] Revision 00600.
- N2-OSP-RSS-R007, "RCIC Remote Shutdown Panel Operational Test," Revision 02;
- N2-OSP-SLS-Q001, "Standby Liquid Control Pump, Check Valve, Relief Valve Operability Test and ASME XI Pressure Test," Revision 01200; and
- N2-CSP-EDG-@501, "Incoming Diesel Fuel," Revision 5.

This represented a total of nine inspection samples, of which four were Routine Surveillances, four were In-Service Testing, and one was a Reactor Coolant System Leakage Detection Surveillance as defined by Inspection Procedure 71111.22.

Enclosure



b. Findings

Introduction: A self-revealing finding of very low safety significance (Green) associated with a non-cited violation (NCV) of 10 CFR Part 50, Criterion XVI, "Corrective Action," was identified following a monthly ST on January 18, 2011, when Unit 2 operators removed the Division I EDG from the grid due to rising jacket water cooling temperature because a thermostatic control valve in the jacket water cooling system had not been properly assembled. As a result, additional unanticipated unavailability for the EDG occurred. The inspectors determined that NMPNS had not performed effective performance monitoring of the Division I EDG jacket water cooling system since April 2008 resulting in a degraded condition of the EDG.

Description: On January 18, 2011, about two hours into monthly surveillance test N2-OSP-EGS-M@001, "Diesel Generator and Diesel Air Start Valve Operability Test-Division I and II," operators removed the Division I EDG from the grid due to a high jacket water cooling temperature alarm. Jacket water temperature was observed to be 197.5 °F when the machine was secured. In a fully loaded condition, jacket water temperature is regulated by a thermostatic control valve set at 165 to 175 °F. In the test mode of operation, the EDG will trip at 205 °F. The high temperature trip function is bypassed when the EDG is operated in the emergency mode.

Three-way thermostatic control valve 2EGS\*TCV150 was refurbished in April 2008. Since then Division I EDG jacket water inlet and outlet temperatures had been erratic and shown a gradual upward trend of 10 to 15 °F compared to the Division II and Division III EDGs. The trend was identified by NMPNS during post-event review of the January 18, 2011, aborted surveillance test. However, personnel had not taken appropriate correction actions to address the adverse trend in a timely manner, commensurate with its safety significance and complexity. Since some jacket water flow through the heat exchanger was maintained by the valve and a bypass line, NMNPS performed a calculation and concluded that the EDG could have continued to perform its safety function in the emergency mode of operation. Valve 2EGS\*TCV150 was repaired and the EDG was tested satisfactorily on January 19, 2011. This issue was entered into the corrective action program (CAP) as CR 2011-000421.

Analysis: The inspectors determined that ineffective performance monitoring of the Division I EDG jacket water cooling system since April 2008 was a performance deficiency in that the degraded condition of the thermostatic control valve was reasonably within NMPNS' ability to foresee and correct. This finding was more than minor because it was similar to NRC Inspection Manual Chapter 0612, Appendix E, Examples of Minor Issues, Example 3.j, in that the inspectors had reasonable doubt regarding the operability of the thermostatic control valve. The finding was associated with the reliability attribute of the mitigating systems cornerstone and affected the cornerstone objective to ensure the availability, reliability and capability of systems that respond to initiating events to prevent undesirable consequences. The inspectors evaluated the significance of this finding using IMC 0609, Attachment 4, "Phase 1 – Initial Screening and Characterization of Findings." The finding was of very low safety significance because it was not a design or qualification deficiency, did not represent a loss of system/train safety function, and did not screen as potentially risk significant due

Enclosure

to external events. The finding had a cross-cutting aspect in the area of problem identification and resolution, CAP, because personnel did not take appropriate correction actions to address an adverse trend in a timely manner, commensurate with its safety significance and complexity. (P.1.d per IMC 0310).

**Enforcement:** 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action," requires, in part, that measures shall be established to assure that conditions adverse to quality, such as failures, malfunctions, deficiencies, deviations, defective material and equipment, and non-conformances are promptly identified and corrected. Contrary to the above, since April 2008, NMPNS did not promptly identify and correct the degraded condition of Division I EDG thermostatic control valve 2EGS\*TCV150. Specifically, the degraded valve caused erratic jacket water cooling water temperature control and a rising trend in system temperature that resulted in unplanned technical specification LCO entry and unanticipated EDG unavailability. NMPNS' immediate corrective actions included repairing the valve and enhancing the valve maintenance procedure to ensure smooth operation. Because this violation was of very low safety significance and has been entered into the CAP as CR 2011-000421, this violation is being treated as an NCV, consistent with the NRC Enforcement Policy. **(NCV 05000410/2011002-01, Inadequate Identification and Corrective Actions for Emergency Diesel Generator Temperature Control Valve Degradation.)**

#### **Cornerstone: Emergency Preparedness**

##### 1EP6 Drill Evaluation (71114.06 - One sample)

###### a. Inspection Scope

On January 22, 2011, the inspectors observed a Unit 1 licensed operator simulator scenario that included a limited test of the NMPNS emergency response plan. The inspectors verified that emergency classification declarations and notifications were completed in accordance with 10 CFR Part 50.72, 10 CFR Part 50 Appendix E, and NMPNS emergency response procedures.

###### b. Findings

No findings were identified.

## 2. **RADIATION SAFETY**

#### **Cornerstone: Occupational/Public Radiation Safety**

##### 2RS5 Radiation Monitoring Instrumentation (71124.05)

###### a. Inspection Scope

NMPNS's program was evaluated against the requirements contained in the Nine Mile Point Unit 1 Off-Site Dose Calculation Manual (ODCM) and Nine Mile Point Unit 2

Enclosure

ODCM for the calibration and maintenance of radiation monitoring equipment utilized in measuring plant effluents.

#### Walkdowns and Observations

The inspector walked down effluent radiation monitoring systems, including liquid and gaseous system. The inspector verified that effluent/process monitor configurations align with ODCM descriptions.

#### Calibration and Testing Program - Process and Effluent Monitors

The inspector verified that channel calibration and functional tests were performed consistent with radiological effluent technical specifications (RETS)/ODCM. The inspector verified that (a) NMPNS calibrated its monitors with National Institute of Standards and Technology traceable sources, (b) if a primary calibration, it adequately represented the plant nuclide mix, (c) if a secondary calibration, it verified the primary calibration, and (d) the channel calibrations encompass the instrument's alarm setpoints.

The inspector verified that effluent monitor alarm setpoints were established as provided in the ODCM and station procedures. For changes to effluent monitor setpoints, the inspector evaluated the basis for changes to ensure that an adequate justification exists.

#### b. Findings

No findings were identified.

### 2RS6 Radioactive Gaseous and Liquid Effluent Treatment (71124.06 – One sample)

#### a. Inspection Scope

NMPNS's program was evaluated against the requirement to provide adequate protection of the public from effluent releases resulting from normal operations of the plant by maintaining the dose to the maximally exposed member of the public in 10 CFR Part 20 and 40 CFR Part 190, as low as is reasonably achievable (ALARA). Criterion 60 in 10 CFR Part 50 Appendix A, requires the control and appropriate mitigation of radioactive materials released as plant effluents. In addition, Paragraph 50.34a (and the associated Appendix I) to 10 CFR Part 50 provide dose based design criteria to ensure the effectiveness of plant effluent processing systems in maintaining effluent releases to the plant environs ALARA.

#### Event Report and Effluent Report Reviews

The inspector reviewed the radiological effluent release reports issued since the last inspection. The inspector determined that the reports were submitted as required by the ODCM/TSS. The inspector identified radioactive effluent monitor operability issues reported by NMPNS as provided in effluent release reports, and determined that the issues were entered into the CAP and adequately resolved.

Enclosure

### ODCM and UFSAR Reviews

The inspector reviewed changes to the ODCM made by NMPNS since the last inspection, against the guidance in NUREG-1301, 1302 and 0133, and Regulatory Guides 1.109, 1.21 and 4.1. The inspector determined that NMPNS had not identified any non-radioactive systems that had become contaminated as disclosed either through an event report or are documented in the ODCM since the last inspection.

### Groundwater Protection Initiative (GPI) Program

The inspector reviewed reported groundwater monitoring results, and changes to NMPNS written program for identifying and controlling contaminated spills/leaks to groundwater.

### Procedures, Special Reports & Other Documents

The inspector reviewed licensee event reports (LERs), event reports and/or special reports related to the effluent program issued since the previous inspection. The inspector identified no additional focus areas for the inspection based on the scope/breadth of problems described in these reports. The inspector reviewed effluent program implementing procedures, particularly those associated with effluent sampling, effluent monitor set point determinations and dose calculations.

### Walkdowns and Observations

The inspector walked down selected components of the gaseous and liquid discharge systems to verify that equipment configuration and flow paths align with the documents, and reviewed and assessed equipment material condition. For equipment or areas associated with the systems selected above, that were not readily accessible due to radiological conditions, the inspector reviewed NMPNSs material condition surveillance records. The inspector walked down those filtered ventilation systems whose test results were reviewed during the inspection. The inspector verified that there were no conditions, such as degraded high efficiency particulate air (HEPA) and charcoal banks, improper alignment, or system installation issues that would impact the performance, or the effluent monitoring capability, of the effluent system. The inspector determined that NMPNS had not made any significant changes to their effluent release points.

The inspector observed the routine processing and discharge of effluents (including sample collection and analysis). The inspector verified that appropriate effluent treatment equipment was being used and that radioactive liquid waste was being processed and discharged in accordance with procedure requirements and aligned with discharge permits.

### Sampling and Analyses

Enclosure

The inspector selected effluent sampling activities and verified that adequate controls had been implemented to ensure representative samples are obtained (e.g. provisions for sample line flushing, vessel recirculation, composite samplers, etc.). The inspector determined that the facility was not routinely relying on the use of compensatory sampling, in lieu of adequate system maintenance, based on the frequency of compensatory sampling since the last inspection.

The inspector reviewed the results of the inter-laboratory comparison program to verify the quality of the radioactive effluent sample analyses. The inspector verified that the inter-laboratory comparison program included hard-to-detect isotopes as appropriate.

#### Instrumentation and Equipment

##### Effluent Flow Measuring Instruments

The inspector reviewed the methodology NMPNS uses to determine the effluent stack and vent flow rates. The inspector verified that the flow rates are consistent with RETS/ODCM or UFSAR values, and that differences between assumed and actual stack and vent flow rates do not affect the results of the projected public doses.

##### Air Cleaning Systems.

The inspector verified that ST results since the previous inspection for TS required ventilation effluent discharge systems (HEPA and charcoal filtration) meet TS acceptance criteria.

##### Dose Calculations

The inspector reviewed radioactive liquid and three gaseous waste discharge permits. The inspector verified that the projected doses to members of the public were accurate and based on representative samples of the discharge path. The inspector evaluated the methods used to determine the isotopes that are included in the source term to ensure all applicable radionuclides were included, within detectability standards. The inspector reviewed the current Part 61 analyses to ensure hard-to-detect radionuclides were included in the source term.

The inspector reviewed changes in NMPNS offsite dose calculations since the last inspection. The inspector verified that the changes were consistent with the ODCM and Regulatory Guide 1.109. The inspector reviewed meteorological dispersion and deposition factors used in the ODCM and effluent dose calculations to ensure appropriate factors were being used for public dose calculations. The inspector reviewed the latest land use census and verified that changes have been factored into the dose calculations.

##### Groundwater Protection Initiative Implementation

The inspector verified that NMPNS was continuing to implement the voluntary Nuclear Energy Institute (NEI)/industry GPI since the last inspection. The inspector reviewed

Enclosure

monitoring results of the GPI to determine if NMPNS had implemented its program as intended, and to identify any anomalous results.

The inspector reviewed identified leakage or spill events and entries made into 10 CFR Part 50.75 (g) records. The inspector reviewed evaluations of leaks or spills, and reviewed any remediation actions taken for effectiveness. The inspector reviewed onsite contamination events involving contamination of ground water.

The inspector verified that onsite ground water sample results and a description of any significant onsite leaks/spills into ground water for each calendar year were documented in the annual radiological environmental operating report for radiological environmental monitoring program or the annual radiological effluent release report for the RETS.

#### Problem Identification and Resolution

The inspector verified that problems associated with the effluent monitoring and control program were being identified by NMPNS at an appropriate threshold and were properly addressed for resolution in NMPNS CAP.

b. Findings

No findings were identified.

#### **4. OTHER ACTIVITIES**

##### **4OA1 Performance Indicator Verification (71151 - Six samples)**

a. Inspection Scope

The inspectors sampled NMPNS submittals for the performance indicators (PIs) listed below. The PI definition guidance contained in NEI 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 6, was used to verify the basis in reporting for each data element and the accuracy of the PI data reported.

#### Cornerstone: Initiating Events

The inspectors reviewed LERs, operator logs and the plant process computer system to determine whether NMPNS accurately reported the number of unplanned scrams, unplanned scrams with complications, and unplanned power changes at Unit 1 and Unit 2 from January 2010 through December 2010.

b. Findings

No findings were identified.

Enclosure

4OA2 Problem Identification and Resolution (71152 - Two samples).1 Review of Items Entered into the CAPa. Inspection Scope

As specified by Inspection Procedure 71152, "Identification and Resolution of Problems," and in order to help identify repetitive equipment failures or specific human performance issues for follow-up, the inspectors performed a daily review of items entered into NMPNS's CAP. In accordance with the baseline inspection procedures, the inspectors also identified selected CAP items across the Initiating Events, Mitigating Systems, and Barrier Integrity cornerstones for additional follow-up and review. The inspectors assessed the threshold for problem identification, the adequacy of the cause analyses, extent of condition review, operability determinations, and the timeliness of the specified corrective actions.

b. Findings

No findings were identified.

.2 Annual Sample - Actions Taken to Address Motor Control Center Spring Clip Engagement Issuesa. Inspection Scope

This inspection was conducted to assess NMPNS's corrective actions associated with issues addressed in CRs 2009-000442, 2009-001472, 2009-003780, and 2010-011459. Specifically, the inspectors reviewed actions taken to address motor contactor spring clip engagement issues that resulted in main steam isolation valve (MSIV) IV-01-01 failing to open during an ST, containment spray suction isolation valve IV-80-22 failing to open on two occasions, and control room emergency ventilation system (CREVS) fan 11 failing to start during an ST. The concern was spring clip engagement issues potentially causing safety systems to be inoperable, unavailable, or unable to perform their safety functions when required.

In particular, the inspectors reviewed the corrective actions NMPNS implemented regarding the lack of engagement between the spring loaded arms and the contactor coils of motor control centers (MCCs) powering the components that failed. The inspectors reviewed procedures, CRs, related industry operating experience, and an LER to assess the effectiveness of NMPNS's corrective actions. The inspectors also discussed the corrective actions with station personnel and conducted walkdowns of MCCs.

b. Findings

Introduction: The inspectors identified a Green NCV of 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action," for NMPNS's failure to take adequate corrective actions for a condition adverse to quality. Specifically, between January 26, 2009, and

Enclosure

November 29, 2010, NMPNS did not implement adequate corrective actions to address a lack of spring clip engagement for 600 volt General Electric 7700 Line MCCs. As a result, the breaker for the control room emergency ventilation system fan failed to correctly operate when required.

Description: Between January 26, 2009, and November 29, 2010, NMPNS Unit 1 experienced four component failures as a result of identical spring clip engagement issues. Standard 600 volt General Electric 7700 Line MCCs are used throughout Unit 1 to power various components, including isolation valves and fans. Within these MCCs, a lead is connected to a spring loaded pivoting arm, which in turn is connected to a contactor coil. The end of a spring loaded arm contains a screw that fits into a recessed hole on the coil contact. When the spring loaded arm screw is not adequately engaged with the recessed hole of the coil contact, the connection is susceptible to failure.

On January 26, 2009, MSIV IV-01-01 failed to reopen from the seven percent closed position during the performance of N1-ST-Q26, "Feedwater and Main Steam Line Power Operated Isolation Valves Partial Exercise Test and Associated Functional Testing of Reactor Protection System Trip Logic." The failure of MSIV IV-01-01, a motor operated valve, to reopen was determined to be caused by a lack of engagement between the spring loaded arm and the coil contact of the MCC cubicle internals, which made the connection susceptible to failure over time. MSIV IV-01-01 was declared inoperable and a four hour LCO was entered. Subsequently, the lead was re-landed and the valve was returned to service. NMPNS revised procedures to require an inspection verifying positive connection and engagement of the power lead to the contactor coil.

On March 23, 2009, containment spray pump suction isolation valve IV-80-22 would not open from the control room. The failure of containment spray IV-80-22 to open was also determined to be caused by a lack of engagement between the spring loaded arm and the coil of the MCC cubicle internals following maintenance (although electrical continuity existed). The last performance of N1-ST-Q6D, "Containment Spray System Loop 122 Quarterly Operability Test," had been on January 7, 2009. Subsequently, the lead was reconnected and the valve was stroked open and closed with no problems noted. NMPNS performed visual inspections of cubicles in all NMPNS Unit 1 MCCs and NMPNS Unit 2 Division III MCCs to determine if similar issues existed with the spring loaded arms attached to the open and close coils.

On July 8, 2009, containment spray IV-80-22 again failed to open during the performance of N1-ST-Q6D. NMPNS determined that the failure of containment spray IV-80-22 to open was caused by inadequate procedures N1-EPM-GEN-182, "Motor Control Center (7700 Line) Inspection," and N2-EPM-GEN-582, "Molded Case Circuit Breaker and Thermal Overload Relay Testing," because these procedures had not been revised to contain verification steps to ensure contactor clips are in the guide slots or seated properly in the opening coil indent. Subsequently, the lead was reconnected, IV-80-22 stroked and the containment spray system restored to an operable status. No new corrective actions were proposed or completed.



On November 29, 2010, CREVS fan 11 failed to start during the performance of N1-RSP-6Q, "Control Room Ventilation Radiation Monitor Instrument Channel Test," and was declared inoperable. The failure of the CREVS fan 11 was determined to be caused by inadequate corrective actions related to the issues that occurred on January 26, 2009, and March 23, 2009, respectively. Specifically, the corrective actions for both events, performing a visual inspection of the remaining MCCs was inadequate in that a visual inspection alone could not conclusively prove spring clip binding was not present. Consequently, NMPNS corrective action for the November 29, 2010, failure included revised MCCs inspection procedures to include physical verification of spring clip engagement. This issue was entered into the CAP as CR-2010-011459.

NMPNS inspected all safety-related spring clips of a similar design in both units to verify proper engagement, NMPNS revised its MCC inspection procedures to include physical verification of spring clip engagement, and NMPNS implemented a new training procedure that includes controls to ensure consistent standards are applied for review and approval of apparent cause evaluations (ACEs), including development of rigorous corrective actions to prevent reoccurrence.

Analysis: The inspectors determined that NMPNS did not take prompt or adequate corrective actions to correct a condition adverse to quality, a lack of connector coil spring clip engagement that prevented the CREVS fan 11 from starting which was reasonably within NMPNS's ability to foresee and prevent. The finding was more than minor because it was associated with the structure, system, and component, and barrier performance attribute of the Barrier Integrity cornerstone, and affected the cornerstone objective to provide reasonable assurance that physical design barriers (fuel cladding, reactor coolant system, and containment) protect the public from radionuclide releases caused by accidents or events. The inspectors evaluated the significance of this finding using NRC IMC 0609, Attachment 4, "Phase 1 - Initial Screening and Characterization of Findings." The finding was determined to be of very low safety significance (Green), because the finding did not represent a degradation of the radiological barrier function of the control room, and the finding did not represent a degradation of the barrier function of the control room against smoke or a toxic atmosphere. This finding had a cross-cutting aspect in the area of problem identification and resolution, CAP component, because NMPNS did not thoroughly evaluate the initial component failures such that the resolutions addressed the causes and extent of conditions. Specifically, NMPNS did not properly prioritize and evaluate spring clip engagement issues. (P.1.c per IMC 0310).

Enforcement: 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action," requires, in part, that measures shall be established to assure that conditions adverse to quality, such as failures, malfunctions, deficiencies, deviations, defective material and equipment, and non-conformances are promptly identified and corrected. Contrary to the above, between January 26, 2009, and July 8, 2009, NMPNS did not take adequate corrective actions to correct contactor to spring clip engagement issues. As a result, on November 29, 2010, CREVS fan 11 failed to properly operate during an ST. NMPNS's corrective actions included developing MCC inspection procedures to include physical verification of spring clip engagement, and revising procedure CNG-TR-1.01-GL007, "Training and Qualification for Personnel Performing Performance Improvement Functions and Activities," to include improved controls to ensure consistent standards

Enclosure

are applied for review and approval of ACEs. Because this finding is of very low safety significance and NMPNS has entered it into its CAP as CR-2010-011459, this violation is being treated as an NCV, consistent with Section VI.A.1 of the NRC Enforcement Policy. **(NCV 05000220/2011002-02, Inadequate Corrective Actions to Correct Motor Control Center Spring Clip Engagement Issues.)**

4OA3 Followup of Events and Notices of Enforcement Discretion (71153)

.1 (Closed) LER 05000220/2010-001-00, Reactor Scram Due to Inadequate Post Maintenance Testing

On November 10, 2010, Unit 1 scrambled from full RTP when outboard MSIVs 01-03 and 01-04 closed following receipt of an invalid low-low reactor water level signal. The scram was the result of two latent preexisting conditions, which deenergized three out of the four power supplies to the MSIVs. When the fourth MSIV power supply was deenergized as part of a planned surveillance activity, the MSIVs closed as designed causing the scram. The first latent condition, which had existed since 2005 when the solenoid-operated valves (SOVs) for the MSIVs were replaced, consisted of misaligned connector pins on grayboot splice connectors for the outboard MSIV channel 11 SOVs. This condition, which had not been identified during the subsequent PMT on the SOVs, deenergized two of the power MSIV solenoid power supplies. The second preexisting condition consisted of a misaligned contact spring in isolation logic channel 12 relay 12K74. This condition, which NMNPS concluded had existed since completion of an August 2010 ST, deenergized the third MSIV solenoid power supply. NMNPS determined the contact spring misaligned when excess plastic material left over from the relay fabrication process distorted the contact spring following completion of the ST.

As discussed in the LER, NMPNS' corrective action included correctly installing the grayboot splice connectors and conducting an appropriate PMT to assure proper operation of the SOVs. Channel 12 relay 12K74 was replaced and tested to assure proper operation. Long term corrective action included developing training for planning personnel to ensure they have an adequate understanding of complex/redundant circuits for the proper determination of PMT requirements. The inspectors concluded that these corrective actions appropriately addressed the root causes of the event.

The events detailed in this LER were discussed in Section 4OA3 of inspection report 05000220/2010005 and resulted in an NCV. The inspectors reviewed the LER and no additional findings of significance were identified. This LER is closed.

.2 Unusual Event Declaration due to Degraded Drywell Atmospheric Conditions

a. Inspection Scope

On March 29, at 0056 a.m. the control room was notified that a small fire had occurred in an electrically powered man lift located in the Unit 1 drywell. In accordance with EPIP-EPP-28, Revision 01500, "Firefighting," the site fire brigade was activated and dispatched to the drywell to investigate. Upon arrival at the fire location, the fire brigade leader determined that the fire had been extinguished by a plant employee through use

Enclosure

of a portable carbon dioxide fire extinguisher. At 0155 a.m. the control room declared an Unusual Event (UE) in accordance with emergency action level 8.3.3, "Man Made Events," when high levels of carbon monoxide were detected in the drywell atmosphere by the site safety department who was conducting follow-up air samples of the drywell atmosphere. The levels of carbon monoxide measured were 79 parts per million (ppm) which exceeded the 50 ppm limit established by the Occupational Safety and Health Administration. Later that day at 0225 a.m., the UE was terminated when atmospheric sampling determined the drywell carbon monoxide levels had decreased below 50 ppm.

In response to the event the resident inspector responded to the control room to evaluate the initial actions taken by operators in response to the man lift fire, and to the out-of-specification carbon monoxide atmospheric readings in the drywell. As part of the follow-up to this event the inspector reviewed NMPNS's emergency response plan procedures EPIP-EPP-01, "Classification of Emergency Conditions at Unit 1," Revision 18, and EPIP-EPP-28, "Fire Fighting," Revision 01500.

b. Findings

No findings were identified.

4OA6 Meetings

Exit Meeting

The inspectors presented the inspection results to Mr. Sam Belcher and other members of licensee management at the conclusion of the inspection on April 7, 2011. The inspectors asked the licensee whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified.

**ATTACHMENT: SUPPLEMENTAL INFORMATION**

Enclosure

**SUPPLEMENTAL INFORMATION****KEY POINTS OF CONTACT****NMPNS Personnel**

S. Belcher, Vice President  
 T. Lynch, Plant General Manager  
 P. Bartolini, Supervisor, Design Engineering  
 J. Dean, Director, Nuclear Oversight  
 R. Dean, Training Manager  
 S. Dhar, Design Engineering  
 J. Dosa, Director, Licensing  
 J. Holton, Supervisor, Systems Engineering  
 J. Kaminski, Director, Emergency Preparedness  
 M. Kunzwiler, Security Supervisor and Fatigue Rule Program Coordinator  
 F. Payne, Unit 1 General Supervisor Operations  
 M. Philippon, Manager, Operations  
 M. Shanbhag, Licensing Engineer  
 H. Strahley, Unit 2 General Supervisor Operations  
 T. Syrell, Manager, Nuclear Safety and Security

**LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED****Opened**

None.

**Opened and Closed**

05000410/2011002-01	NCV	Inadequate Identification and Corrective Actions for Emergency Diesel Generator Temperature Control Valve Degradation (Section 1R22)
05000220/2011002-02	NCV	Inadequate Corrective Actions to Correct Motor Control Center Spring Clip Engagement Issues. (Section 4OA2)

**Closed**

05000220/2010-001-00	LER	Reactor Scram Due to Inadequate Post Maintenance Testing (Section 4OA3)
----------------------	-----	---

Attachment

Discussed

None.

**LIST OF DOCUMENTS REVIEWED**

**Section 1R01: Adverse Weather Protection**

Procedures

N1-OP-64, "Meteorological Monitoring," Revision 00400  
N1-PSH-11, "Seasonal Readiness Program," Revision 06  
N1-SOP-19, "Intake Structure Icing," Revision 03

**Section 1R04: Equipment Alignment**

Procedures

N1-OP-6, "Fuel Pool Filtering and Cooling System," Revision 02400  
N1-OP-13, "Emergency Cooling System," Revision 03500  
N1-ST-SO, "Shift Checks," Revision 02301  
N2-OP-100A, "Standby Diesel Generators," Revision 01000  
N2-VLU-01, "Walkdown Order Valve Lineup and Valve Operations," Revision 00, Attachment  
100A

Drawings

C-18008-C, "Spent Fuel Storage Pool Filtering and Cooling System," Revision 27  
C-18018-C, "Reactor Shutdown Cooling System," Revision 30  
C-18022-C, "Service Water Reactor and Turbine BLDG," Revision 68  
C-18017-C, "Emergency Cooling System," Sheet 1 Revision 55  
C-18039-C, "Cardox Fire Extinguishing System P&I Diagram Sheet 1," Revision 9  
C-18039-C, "Cardox Fire Extinguishing System P&I Diagram Sheet 2," Revision 6  
C-18039-C, "Cardox Fire Extinguishing System P&I Diagram Sheet 3," Revision 5

Condition Reports

2011-00387

**Section 1R05: Fire Protection**

Procedures

N1-FPI-PFP-0101, "Unit 1 Pre-fire Plans," Revision 01  
N2-FPI-PFP-0201, "Unit 2 Pre-fire Plans," Revision 02

Documents

Unit 2 UFSAR, Appendix 9A, "Degree of Compliance With Branch Technical Position CMEB  
9.5-1, Revision 2, Dated July 1981," Revision 18  
Unit 1 UFSAR, Appendix 10B, "Appendix R Safe Shutdown Analysis"

Attachment

**Section 1R11: Licensed Operator Regualification Program**

Procedures

N1-SOP-33A.1, "Loss of 115 KV," Revision 00200  
N1-SOP-24.1, "TBCLC Failure," Revision 00300  
N1-SOP-1, "Reactor Scram," Revision 02100  
N1-SOP-40.1, "Loss of RPS," Revision 00200  
N1-EOP-1, "NMP1 EOP Support Procedure," Revision 00900  
N1-EOP-2, "RPV Control Flowchart," Revision 01400  
N1-EOP-5, "Secondary Containment Control Flowchart," Revision 01400  
N2-SOP-97, "Reactor Protection System Failures," Revision 04  
N2-SOP-101D, "Rapid Power Reduction," Revision 00701  
N2-SOP-08, "Unplanned Power Changes," Revision 00701  
N2-EOP-RPV, "RPV Control – Flowchart," Revision 01300  
N2-EOP-PC, "Primary Containment Control – Flowchart," Revision 12  
N2-EOP-C4, "RPV Flooding – Flowchart," Revision 01300  
N2-EOP-6, "NMP2 EOP Support Procedure," Revision 01200

**Section 1R12: Maintenance Effectiveness**

Condition Reports

2011-000865  
2010-001613  
2010-002444  
2011-002483

**Section 1R13: Maintenance Risk Assessments and Emergent Work Control**

Procedures

CNG-OP-4.01-1000, "Integrated Risk Management," Revision 00800

Work Orders

C90934388, N2-EPM-GEN-W665 DC Weekly Checks

Condition Reports

2011-000674

**Section 1R15: Operability Evaluations**

Procedures

CNG-OP-1.01-1002, "Conduct of Operability Determinations / Functionality Assessments,"  
Revision 00101  
N1-OP-45, "Emergency Diesel Generators," Revision 03100  
S15-79-HTX04, "Thermal Performance Evaluation For The Unit 1 Emergency Diesel Generator  
(EDG) Jacket Water Coolers," Revision 00

Documents

ECP-11-000073, "Alternate Cooling to the Spent Fuel Pool," Revision 0000

Drawings

C-18026-CFSK-27-6D J.O. 12177 LOOP 2RSS\*106, "Remote Shutdown, RCIC Pmp Discharge Flow"

FSK-27-6D, J.O.12177 LOOP 2ICS\*102, "Reactor Core Isolation Cooling Flow"

C-16026-C, "Emergency Diesel Generator #103 Starting Air, Cooling Water Lube Oil and Fuel Sheet 2," Revision 22

Condition Reports

2010-000433

**Section 1R18: Plant Modifications**

Procedures

CNG-CA-1.01-1000, "Corrective Action Program," 00400

CNG-CM-1.01-1003, "Design Engineering and Configuration Control," Revision 00300

CNG-CM-1.01-1004, "Temporary Plant Configuration Change Process," Revision 0000

CNG-CM-1.01-1006, "Design Verification," Revision 0000

N1-ST-M3, "Suppression Chamber – Drywell Relief Valves Exercising," Revision 01300

N1-ST-Q8A, "Liquid Poison Pump 11 and Check Valve Operability Test," Revision 00400

N2-OP-96, "Reactor Manual Control and Rod Position Indication System," Revision 00402

Documents

ECP-11-000002, "Replace U1 Liquid Poison Pump Internals to Achieve Greater Flow," Revision 0000

ECP-10-000438, "Unit 2 TCP for Lifted Leads or Control Rod 22-07," Revision 0000

ECP-10-000444, "Restore Indication Annun. K1-4-6," Revision 0000

Drawings

C-18006-C, "Drywell and Torus Isolation and Blocking Valves P & I Diagram," Sheet 2, Revision 31

Condition Reports

1999-001710	2010-004950	2010-005447
2001-006022	2010-005049	2010-005677
2004-000326	2010-005053	2010-008024
2006-001941	2010-005179	2010-008834
2010-001975	2010-005312	
2010-003030	2010-005410	

**Section 1R19: Post-Maintenance Testing**

Procedures

CNG-MN-4.01-1008, "Pre/Post-Maintenance Testing," Revision 00001

Documents

Unit 1 Technical Specification 3.3.8.1

Condition Reports

2010-007749  
2008-006882  
2010-700780  
2010-009476

**Section 1R20 Refueling and Other Outage Activities**

Procedures

N1-IPM-CAL-007, "Differential Pressure Indicating Switch and Pressure Indicating Switch Instrument Loop Calibration (Two year or Less Frequency)," Revision 00200  
N1-PM-V7, "Reactor Building Closed Loop Cooling System Pump and Valve Operability Test," Revision 00100, and N1-PM-V2, "Pump Curve Validation," Revision 00700  
N1-SOP-13, "Recirc Pump Trip at Power," Revision 01  
N1-OP-43C, "Plant Shutdown," Revision 00601  
S-EPM-GEN -064 Attachment 3, "Electrical Preventive Maintenance Procedure," Revision 00400  
N1-ST-Q1B, "CS 121 Pump Valve and SDC Water Seal Check Valve Operability Test," Revision 01100  
N1-PE-P6735, "Recirculation System Suction Plug Installation/Removal Procedure for Nine Mile Point Unit 1," Revision 00000

Work Orders

C91223177

Condition Reports

2011-002238  
2011-002276  
2011-002304

**Section 1R22: Surveillance Testing**

Procedures

S-ODP-OPS-0110, "Containment Leak Evaluation," Revision 00200  
N1-OP-8, "Primary Containment Area Cooling System," Revision 01001  
N1-ST-SO, "Shift Checks," Revision 2300  
N1-ST-C9, "Control Room Emergency Ventilation System Operability Test," Revision 1501  
N1-ST-C25, "Liquid Poison Pump Operability Test," Revision 01  
N1-ST-Q20, "Reactor Building Heating, Cooling, and Ventilation System Test," Revision 01300  
N2-CSP-EDG-@501, "Incoming Diesel Fuel," Revision 5  
N1-ST-Q25, "Emergency Diesel Generator Cooling Water Quarterly Test," Revision 01700  
N1-ISP-LRT-TYC, "Type 'C' Containment Isolation Valve Leak Rate Test," Revision 00600  
N2-OSP-EGS-M@001, "Diesel Generator and Diesel Air Start Valve Operability Test- Division I and II," Revision 00601



Condition Reports

2011-001131

2011-001132

2011-001892

**Section 2RS5: Radiation Monitoring Instrumentation**

Nine Mile Point Unit 1 Off-Site Dose Calculation Manual, Revision 31

Nine Mile Point Unit 2 Off-Site Dose Calculation Manual, Revision 32

Unit 1 Radiation Monitoring System

N1-ISP-085-001, Radwaste Discharge to Tunnel Radiation Monitor Instrument Calibration,  
2/24/09

N1-RSP-14A, Liquid Radwaste Monitor Channel Calibration, 3/20/09

N1-RSP-11A, Calibration of the Service Water Discharge Monitor, 11/16/09

N1-CSP-R326, RAM-112-07A Range of Energy Calibration Verification, 7/15/09

N1-CSP-R327, RAM-112-08A Range of Energy Calibration Verification, 9/23/10

N1-CSP-R328, RAM-10A Range of Energy Calibration Verification, 9/23/10

N1-CSP-R329, RAM-10B Range of Energy Calibration Verification, 1/22/10

N1-RSP-13, Stack Radiation Monitor Calibration Check and Channel Test #7: 7/13/09; 7/15/09;  
8/14/09

N1-RSP-13, Stack Radiation Monitor Calibration Check and Channel Test #8: 9/20/10; 9/23/10

N1-RSP-13, Stack Radiation Monitor Calibration Check and Channel Test #10A; 9/20/10;  
9/23/10

N1-RSP-13, Stack Radiation Monitor Calibration Check and Channel Test #10B: 1/20/10;  
1/22/10

N1-ISP-112-001, Stack Gas Monitor Calibration – RAM-112-07, 7/14/09

N1-ISP-112-001, Stack Gas Monitor Calibration – RAM-112-08, 9/21/10

N1-ISP-112-010 10A, Stack Gas Process Radiation Monitor Channel Calibration – RAM-10A,  
9/22/10

N1-ISP-112-010 10B, Stack Gas Process Radiation Monitor Channel Calibration – RAM-10B,  
1/22/10

N1-ISP-112-004, Off-Gas Radiation Monitor Instrument Channel Calibration, 1/14/10

N1-RSP-9C, Instrument Channel Calibration of Emergency Condenser Vent Radiation  
Monitors - #111, 2/11/09

N1-RSP-9C, Instrument Channel Calibration of Emergency Condenser Vent Radiation  
Monitors - #112, 9/30/09

N1-RSP-9C, Instrument Channel Calibration of Emergency Condenser Vent Radiation  
Monitors - #121, 2/11/09

N1-RSP-9C, Instrument Channel Calibration of Emergency Condenser Vent Radiation  
Monitors - #122, 9/30/09

Unit 2 Radiation Monitoring System

N2-RSP-RMS-R116, Channel Calibration Test of the Liquid Radwaste Effluent Line Liquid  
Process Radiation Monitor, 9/2/09

N2-RSP-RMS-R113, Channel Calibration Test of the Service Water Effluent Line Process  
Radiation Monitors 2SWP\*CAB146A and 2SWP\*CAB146B – CAB146A, 2/15/10

N2-RSP-RMS-R113, Channel Calibration Test of the Service Water Effluent Line Process  
Radiation Monitors 2SWP\*CAB146A and 2SWP\*CAB146B – CAB146B, 1/15/10  
N2-RSP-RMS-R112, Channel Calibration Test of the Cooling Tower Blowdown Line Liquid  
Process Radiation Monitor, 6/3/09  
N2-ISP-RMS-001, Main Stack Wide Range Gas Monitor System Calibration, 12/30/10  
N2-ISP-RMS-002, Reactor Building Vent Wide range Gas Monitor System Calibration, 12/30/10

#### **Section 2RS6: Radioactive Gaseous and Liquid Effluent Treatment**

Nine Mile Point Nuclear Station, Unit No. 1, Radioactive Effluent Release Report,  
January – December 2009  
Nine Mile Point Nuclear Station, Unit No. 2, Radioactive Effluent Release Report,  
January – December 2009  
Genie Efficiency Calibrations: Unit 1-Detector 2; Unit 2-Detectors 1 & 2; April 2010  
Eckert & Ziegler Analytics, Results of Radiochemistry Cross Check Program, NMP-1  
1<sup>st</sup> Quarter 2010  
Eckert & Ziegler Analytics, Results of Radiochemistry Cross Check Program, NMP-2  
1<sup>st</sup> Quarter 2010  
Report of Audit CHE-09-01-N, Chemistry Program, 6/3/09  
Q&PA Assessment Report 09-011, Offgas Sampling, 1/30/09  
Q&PA Assessment Report 10-065, NMP: Reliability of Plant Equipment That Impacts  
Chemistry, 10/26/10

#### **Air Cleaning Systems**

NCS Corporation Radioiodine Penetration/Efficiency Test Reports: 11/12/10; 12/10/10  
NCS In-Place Testing of Nuclear Air Cleaning Systems for Nine Mile Point Unit I: 3/5/10;  
3/17/10  
NCS In-Place Testing of Nuclear Air Cleaning Systems for Nine Mile Point Unit II: 10/2/08;  
8/5/09; 11/15/10

#### **Release Permits**

N1-CSP-V342, Containment Purge Evaluation, 11/10/10  
N1-CSP-M370, Emergency Condenser Shell Sampling and Analysis, 11/12/10  
N1-CSP-V371, Emergency Condenser Vent Release Rate Determination, November 2010  
N1-CSP-M204, Liquid Release Dose Calculations, December 2010  
N1-CSP-M351, Particulate, Iodine, and Tritium Dose Calculations, December 2010  
N1-CSP-M350, Noble gas Dose Calculations, December 2010  
N2-CSP-LWS-M203, Monthly Liquid Release Dose Calculations, September 2010

#### **Unit 1 Flow Rate Devices**

N1-ISP-085-002, Liquid Radwaste Effluent Line, 3/13/09  
N1-CTP-V203, Service Water Radiation Monitor Flow Adjustment/ Pump Switch/ Air Purge/  
Pump Start/ Shutdown, 10/29/10  
N1-ISP-112-005, Stack Flow Instrument Calibration, 1/30/10  
N1-ISP-112-008, OGESMS Flow Instrument Calibration, 10/15/10  
N1-ISP-077-005, Off Gas Sample/ System Flow Instrument Channel Calibration, 3/6/09

Unit 2 Flow Rate Devices

N2-ISP-LWS-R101, Liquid Radwaste Discharge Flow to Lake Instrument Channel Calibration, 8/26/10  
 N2-ISP-SWP-R112, Service Water Effluent Lines A and B Flow Instrument Channel Calibration – Div II, 8/7/10  
 N2-ISP-CWS-A101, Calibration Test of the Circulating Water Cooling Tower Blowdown Line Flow Instrument Channel, 11/25/09  
 N2-RSP-RMS-R100, Operating Cycle Channel Calibration of the Flow System on the DRMS Gaseous/Particulate Process Radiation Monitors – 14A, 10/19/10  
 N2-RSP-RMS-R100, Operating Cycle Channel Calibration of the Flow System on the DRMS Gaseous/Particulate Process Radiation Monitors – 14B, 12/9/10  
 N2-RSP-RMS-R100, Operating Cycle Channel Calibration of the Flow System on the DRMS Gaseous/Particulate Process Radiation Monitors – 32A, 10/18/10  
 N2-RSP-RMS-R100, Operating Cycle Channel Calibration of the Flow System on the DRMS Gaseous/Particulate Process Radiation Monitors – 32B, 10/5/10  
 N2-IPM-GEN-@001, Safety Related Loop Calibration -2RMS-FT180, 12/10/10  
 N2-RSP-RMS-R100, Operating Cycle Channel Calibration of the Flow System on the DRMS Gaseous/Particulate Process Radiation Monitors – CAB105, 3/13/09  
 N2-IPM-GEN-@001, Safety Related Loop Calibration – 2RMS-FT170, 12/11/09

**Section 40A2: Problem Identification and Resolution**Condition Reports

2011-000735	2011-000100	2010-011504
2011-000712	2011-001938	2010-011505
2011-000713	2009-003780	
2011-000714	2010-011459	
2010-011608	2010-011502	
2010-011743	2009-000442	
2011-000075	2009-001472	
2011-000076	2011-001948	

Procedures

CNG-CA-1.01-1000, "Corrective Action Program," Revision 00400  
 CNG-CA-1.01-1005, "Apparent Cause Evaluation," Revision 00500  
 CNG-AM-1.01-1023, "Maintenance Rule Program," Revision 00100  
 CNG-TR-1.01-GL007, "Training and Qualification for Personnel Performing Performance Improvement Functions and Activities," Revision 00001  
 N1-EPM-GEN-182, "Motor Control Center (7700 Line) Inspection," Revision 01300  
 N1-EPM-GEN-182, "Motor Control Center (7700 Line) Inspection," Revision 01500  
 N1-RSP-6Q, "Control Room Ventilation Radiation Monitor Instrument Channel Test," Revision 00801  
 N1-ST-6Q, "Containment Spray System Loop 122 Quarterly Operability Test," Revision 00801  
 N2-EPM-GEN-V582, "Molded Case Circuit Breaker and Thermal Overload Relay Testing," Revision 01400

Documents

LER 2009-001, "Failure to Implement Required Technical Specification Actions Associated with Failed Surveillance Test," Revision 00

Drawings

C-18012-C, "Reactor Containment Spray System P&I Diagram," Revision 47

**Section 40A3: Followup of Events and Notices of Enforcement Discretion**

EPIP-EPP-01, "Classification of Emergency Conditions at Unit 1," Revision 18

EPIP-EPP-28, "Firefighting," Revision 01500

Condition Report

2011-002777

**LIST OF ACRONYMS**

ACE	apparent cause evaluation
ADAMS	Agencywide Documents Access and Management System
ALARA	as low as is reasonably achievable
CAP	corrective action program
CFR	Code of Federal Regulations
CR	condition report
CREVS	control room emergency ventilation system
° F	degrees Fahrenheit
DBD	design basis document
ECP	engineering change package
EDG	emergency diesel generator
EOP	emergency operating procedure
GPI	groundwater protection initiative
HEPA	high efficiency particulate air
HPCS	high pressure core spray
IMC	Inspection Manual Chapter
kV	kilovolt
LCO	limiting condition for operation
LER	licensee event report
LLRT	local leak rate test
LORT	licensed operator requalification training
MCC	motor control center
MSIV	main steam isolation valve
NCV	non-cited violation
NEI	Nuclear Energy Institute
NMPNS	Nine Mile Point Nuclear Station, LLC
NRC	Nuclear Regulatory Commission
ODCM	off-site dose calculation manual
PARS	Publicly Available Records
PI	performance indicator
PMT	post maintenance test
PPM	parts per million
RCIC	reactor core isolation cooling
RETS	radiological effluent technical specifications
RFO	refueling outage
RMS	radiation monitoring system
RTP	rated thermal power
SDP	significance determination process
SOP	special operating procedure
SOV	solenoid-operated valve
SSC	structure, system, and component
ST	surveillance test
SW	service water
TB	turbine building
TS	technical specification

A-11

UE  
UFSAR  
WO

Unusual Event  
updated final safety analysis report  
work order

Attachment